

## **ABSTRACT**

Methods and apparatus for mass filtering based on a-priori biomarker knowledge and elution time intervals for selected ion species from a separation device. A sample may be screened for biomarker patterns based on distinct elutions times for selected ions or peptides. A mass spectrum for species of interest can be tailored by filtering out undesired ions by measuring corresponding elution times and determining a priori selected elution time intervals for desired ion species only. The invention assists in the identification of biomarkers having known mass spectral peaks corresponding to known proteins or ions of interest that are known to elute from a separation device within a pre-defined elution time window.